REMARKS/ARGUMENTS

1.) Status of Application

Claim 6 has been amended.

Claims 18-22 and 40-44 are objected to, but otherwise allowable.

Claims 1-17, 23-39 are rejected.

Claims 1-44 are pending.

As an initial point, the Applicant wishes to thank the Examiner for his careful review of the claims and the allowance of claims 18-22 and 40-44. Favorable reconsideration of the other claims in this application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Objections - 35 U.S.C. § 112

The Examiner objected to claim 6 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant has amended the claim to more particularly claim the invention. The Examiner's consideration of the amended claim is respectfully requested.

3.) Claim Rejections – 35 U.S.C. § 103 (a)

The Examiner rejected claims 1-7, 17, 23-29 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Cohen, et al. (US 5,825,771) in view of Kleijn (EP 0680033 A2). The Applicant respectfully traverses this rejection.

a. Not All Elements are Taught by the Combination:

As the Examiner admitted, Cohen fails to disclose playing out said speech signals with a second frequency (F2), performing *a dynamic sample rate conversion* of a speech frame comprising N samples on *a sample by sample basis* - which are elements in both independent claim 1 and 23. The Examiner relies on Kleijn for these elements.

However, as the Examiner notes, Kleijn teaches modifying the speech rate of the excitation signal provided by the speech signal source by either inserting or removing sample sequences of the excitation signal which correspond substantially to a pitch period (See Kleijn, page 4, line 2-4). Thus, the solution according to Kleijn works on inserting or removing pitch periods, and not on a sample-by-sample basis.

The Examiner argues that a pitch period correspond "substantially" to sample sequences of the excitation signal (i.e., an individual sample). The Applicant respectfully disagrees with this assertion. Normally, the pitch frequency is in the range from 50-60 Hz up to 400-500 Hz. For example, most speech codecs use a pitch period in the interval 16-145 Hz, counted in the number of samples at a sampling frequency of 8 kHz. Therefore, Kleijn does not disclose the use of "performing a dynamic sample rate conversion of a speech frame comprising N samples on a *sample-by-sample basis*" which is an element of both claim 1 and 23.

In Kleijn, where pitch periods are inserted or removed, it is assumed a fixed conversion factor between the transmitting and receiving side. Therefore, it appears that the invention disclosed in Kleijn cannot be used in dynamic systems, i.e. where the sampling frequency varies. For instance, in Kleijn, "the speech rate of an input signal is modified based on a signal representing *a predetermined change in speech rate*." (page 2, lines 48-49). Thus, Kleijn does not perform a dynamic sample rate conversion.

As provided in MPEP § 2143, "[t]o establish a prima facie case of obviousness, ... the prior art reference (or references when combined) *must teach or suggest all the claim limitations*." It is respectfully submitted that the combination of Kleijn with Cohen does not teach the elements of "performing *a dynamic sample rate conversion* of a speech frame comprising N samples on *a sample by sample basis*" as required by claims 1 and 23. Thus, the 103 rejection should be withdrawn.

b. The recognition of a problem is not obvious even though the solution to the problem may be obvious:

Assuming *arguendo*, that the claimed invention is obvious. In the present case, it is apparent from a reading of the Cohen patent and the Kleijn patent that neither patent recognized the problem of underrun or overrun situations due to different clock

frequencies in the audio units. Thus, this is a classic example of a solution to a problem being obvious only after recognition of the problem by the applicant and is part of the "subject matter as a whole" language of 35 USC §103. As the MPEP states in Section 2141.02:

> "[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103." *In re Sponnoble*, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969).

For instance, Kleijn appears focused on changing the playback rate of a speech signal stored in compressed form for playback later and at a different speed to that at which it was stored. For example, in claim 1 of Kleijn it says: "predetermined change of SPEECH-RATE". According to the claimed solution of claims 1 and 23, the original speech rate is the same, even if the sampling frequency is changed.

In Cohen, the number of packets/frames in the jitter buffer is the only parameter that has an influence on the decision whether packets/frames should be removed or added. The solution according to Cohen does not distinguish the underlying problem which causes the number of packets/frames in the jitter buffer to fluctuate.

There are primarily two problems that cause the number of packets/frames in the jitter buffer to fluctuate:

1) Delay jitter in the transmission

2) Different clock frequencies in the audio units

The claimed invention of this Application proposes a solution to the second problem but not to the first problem. This is in contrast to Cohen which suggests an "all in one" solution to the general problem.

However, the problem with handling both above identified problems in the same solution is that a difference in clock frequencies, that usually is fairly constant between two clients, is added to the delay jitter. The range (max Delay – min Delay) is often used as an input parameter to the adaptation algorithm that controls how many packets/frames to buffer in the jitter buffer. The added delay caused by the difference in clock frequencies in turn implies a delay for the users. Consequently, the users

experience a "walkie-talkie"-like communication, which is very irritating for real time applications.

The analysis in Cohen is performed on a rough packet/frame by packet/frame level and therefore it takes a relatively long period of time before a difference in clock frequencies between two clients is detected. The adjustments (removing or adding packets/frames) in the jitter buffer according to Cohen are made on a rough packet/frame level, which may affect the speech quality negatively.

For real time applications such as IP-telephony, separate solutions to the two above identified problems are necessary. A solution to the second problem and is signified by fast and fine adjustments on a sample-by-sample basis. This is in contrast to the rough packet/frame by packet/frame basis - which addresses the general problem.

Thus, the solution to a problem in claims 1 and 23, if they are obvious, are only obvious only after recognition of the problem by the applicant, and cannot be summarily rejected under 103.

c. The Combination of References is Improper:

Even if none of the above arguments for non-obviousness apply (which is clearly not the case based on the above), there is still another, mutually exclusive, and compelling reason why the Cohen and Kleijn patents cannot be applied to reject claims 1 and 23 under 35 U.S.C. § 103.

Section 2142 of the MPEP also provides:

> *...the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed "as a whole".*

Here, neither Cohen nor Kleijn teaches, or even suggests, the desirability of the combination "performing a dynamic sample rate conversion of a speech frame comprising N samples on a sample by sample basis" as specified above and as claimed in claims 1 and 23.

Thus, it is clear that neither patent provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. § 103 rejection.

In this context, the MPEP further provides at § 2143.01:

> *The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.*

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

In the present case it is clear that the combination arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in either reference for the combination as applied to claims 1 and 23. Therefore, for this mutually exclusive reason, the examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

Claims 2 through 22 depend from claim 1 and recite further limitations in combination with the novel elements of claim 1. Similarly claims 24 through 44 depend from claim 23 and recite further limitations in combination with the novel elements of claim 23. Therefore, the allowance of claims 2 through 22 and 24 through 44 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

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Respectfully submitted,

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